

CLAIMS

What is claimed is:

- 1 1. A method comprising:  
2 receiving a data packet from a source;  
3 determining whether a session identity exists for a communication session with  
4 the source;  
5 transmitting the data packet to a destination if no session identity exists;  
6 receiving the session identity from the destination; and  
7 transmitting subsequent data packets received from the source along with the  
8 session identity to the destination.
- 1 2. The method of claim 1 wherein determining whether a session identity exists for a  
2 communication session with the source comprises:  
3 obtaining address information from the data packet; and  
4 searching a table using the address information for the session identity.
- 1 3. The method of claim 2 wherein searching a table using the address information  
2 for the session identity comprises:  
3 using the address information in a hash function to obtain a hash value; and  
4 using the hash value to find the session identity.

1 4. The method of claim 1 wherein transmitting the data packet to a destination if no  
2 session identity exists comprises:

3 selecting a particular destination;

4 adding a header to the received data packet; and

5 transmitting the header along with the received data packet to the destination.

1 5. The method of claim 4 wherein adding a header to the received data packet  
2 comprises:

3 including at least one of a flow message type field, a flow option field, a source

4 port identity field, a destination identity field and a session identity field in the header of

5 the received data packet.

1 6. The method of claim 1 further comprising:

2 removing a header prior to transmitting data packets received from the destination

3 to the source; and

4 using information in the header to transmit data packets received from the

5 destination to the source.

1 7. The method of claim 6 wherein the information in the header comprises the  
2 source port identity.

1 8. The method of claim 1 wherein transmitting subsequent data packets received  
2 from the source along with the session identity to the destination comprises:

3 adding a header including at least one of a flow message type field, a flow option field, a  
4 source port identity field, a destination identity field, and a session identity field; and not  
5 transmitting at least part of address information in the received subsequent data packets  
6 to the destination.

1 9. A method comprising:  
2 receiving a data packet from a source through a network node;  
3 determining whether a session identity exists for a communication session with  
4 the source;  
5 generating a session identity if no session identity exists; and  
6 transmitting the session identity to the network node.

1 10. The method of claim 9 wherein determining whether a session identity exists for a  
2 communication session with the source comprises:  
3 obtaining the session identity from the data packet if one is included in the data  
4 packet;  
5 obtaining address information of the network node; and  
6 transmitting data to the network node using the address information.

1 11. The method of claim 10 wherein obtaining address information of the network  
2 node using the session identity comprises using the session identity as a pointer to the  
3 network node's address information.

1 12. The method of claim 10 wherein transmitting data to the network node using the  
2 address information comprises not transmitting at least part of the source's address  
3 information in the received data packet.

1 13. An article of manufacture comprising:  
2 a machine-accessible medium including instructions that, when executed by a  
3 machine, causes the machine to perform operations comprising:  
4 receiving a data packet from a source;  
5 determining whether a session identity exists for a communication session with  
6 the source;  
7 transmitting the data packet to a destination if no session identity exists;  
8 receiving the session identity from the destination; and  
9 transmitting subsequent data packets received from the source along with the  
10 session identity to the destination.

1 14. An article of manufacture as in claim 13 wherein instructions for determining  
2 whether a session identity exists for a communication session with the source comprises  
3 further instructions for:  
4 obtaining address information from the data packet; and  
5 searching a table using the address information for the session identity.

1 15. An article of manufacture as in claim 14 wherein instructions for searching a table  
2 using the address information for the session identity comprises further instructions for

3           using the address information in a hash function to obtain a hash value; and  
4           using the hash value to find the session identity.

1    16.    An article of manufacture as in claim 13 wherein instructions for transmitting the  
2    data packet to a destination if no session identity exists comprises further instructions for:  
3           selecting a particular destination;  
4           adding a header to the received data packet; and  
5           transmitting the header along with the received data packet to the destination.

1    17.    An article of manufacture as in claim 16 wherein instructions for adding a header  
2    to the received data packet comprises further instructions for:  
3           including at least one of a flow message type field, a flow option field, a source  
4    port identity field, a destination identity field and a session identity field in the header of  
5    the received data packet.

1    18.    An article of manufacture as in claim 13 comprising further instructions for  
2    removing a header prior to transmitting data packets received from the destination to the  
3    source; and  
4           using information in the header to transmit data packets received from the  
5    destination to the source.

1    19.    An article of manufacture as in claim 18 wherein instructions for using  
2    information in the header to transmit data packets received from the destination to the

3 source comprises instructions for using the source port identity to transmit data packets  
4 received from the destination to the source.

1 20 An article of manufacture as in claim 13 wherein instructions for transmitting  
2 subsequent data packets received from the source along with the session identity to the  
3 destination comprises further instructions for adding a header including at least one of a  
4 flow message type field, a flow option field, a source port identity field, a destination  
5 identity field, and a session identity field; and not transmitting at least part of address  
6 information in the received subsequent data packets to the destination.

1 21. An article of manufacture comprising:  
2 a machine-accessible medium including instructions that, when executed by a  
3 machine, causes the machine to perform operations comprising:  
4 receiving a data packet from a source through a network node;  
5 determining whether a session identity exists for a communication session with  
6 the source;  
7 generating a session identity if no session identity exists; and  
8 transmitting the session identity to the network node.

1 22. An article of manufacture as in claim 21 wherein determining whether a session  
2 identity exists for a communication session with the source comprises further instructions  
3 for:

4 obtaining the session identity from the data packet if one is included in the data  
5 packet;  
6 obtaining address information of the network node; and  
7 transmitting data to the network node using the address information.

1 23. An article of manufacture as in claim 22 wherein obtaining address information of  
2 the network node using the session identity comprises further instructions for using the  
3 session identity as a pointer to the network node's address information.

1 24. An article of manufacture as in claim 21 wherein instructions for transmitting data  
2 to the network node using the address information comprises further instructions for not  
3 transmitting at least part of the source's address information in the received data packet.

1 25. A computer system comprising:  
2 a bus;  
3 a data storage device coupled to said bus; and  
4 a processor coupled to said data storage device, said processor operable to receive  
5 instructions which, when executed by the processor, cause the processor to perform a  
6 method comprising  
7 receiving a data packet from a source;  
8 determining whether a session identity exists for a communication session with  
9 the source;  
10 transmitting the data packet to a destination if no session identity exists;

11 receiving the session identity from the destination; and  
12 transmitting subsequent data packets received from the source along with the  
13 session identity to the destination.

1 26. A computer system as in claim 25 wherein determining whether a session identity  
2 exists for a communication session with the source comprises:  
3 obtaining address information from the data packet; and  
4 searching a table using the address information for the session identity.

1 27. A computer system as in claim 26 wherein searching a table using the address  
2 information for the session identity comprises:  
3 using the address information in a hash function to obtain a hash value; and  
4 using the hash value to find the session identity.

1 28. A computer system as in claim 25 wherein transmitting the data packet to a  
2 destination if no session identity exists comprises:  
3 selecting a particular destination;  
4 adding a header to the received data packet; and  
5 transmitting the header along with the received data packet to the destination.

1 29. A computer system as in claim 28 wherein adding a header to the received data  
2 packet comprises:



3 including at least one of a flow message type field, a flow option field, a source  
4 port identity field, a destination identity field and a session identity field in the header of  
5 the received data packet.

1 30. A computer system as in claim 25 further comprising:  
2 removing a header prior to transmitting data packets received from the destination  
3 to the source; and  
4 using information in the header to transmit data packets received from the  
5 destination to the source.

1 31. A computer system as in claim 30 wherein the information in the header  
2 comprises the source port identity.

1 32. A computer system as in claim 25 wherein transmitting subsequent data packets  
2 received from the source along with the session identity to the destination comprises  
3 adding a header including at least one of a flow message type field, a flow option field, a  
4 source port identity field, a destination identity field, and a session identity field; and not  
5 transmitting at least part of address information in the received subsequent data packets  
6 to the destination.

1 33. A computer system comprising:  
2 a bus;  
3 a data storage device coupled to said bus; and

4 a processor coupled to said data storage device, said processor operable to  
5 receive instructions which, when executed by the processor, cause the processor to  
6 perform a method comprising receiving a data packet from a source through a network  
7 node;  
8 determining whether a session identity exists for a communication session with  
9 the source;  
10 generating a session identity if no session identity exists; and  
11 transmitting the session identity to the network node.

1 34. A computer system as in claim 33 wherein determining whether a session identity  
2 exists for a communication session with the source comprises:  
3 obtaining the session identity from the data packet if one is included in the data  
4 packet;  
5 obtaining address information of the network node using the session identity; and  
6 transmitting data to the network node using the address information.

1 35. A computer system as in claim 34 wherein obtaining address information of the  
2 network node using the session identity comprises using the session identity as a pointer  
3 to the network node's address information.

1 36. A computer system as in claim 34 wherein transmitting data to the network node  
2 using the address information comprises not transmitting at least part of the source's  
3 address information in the received data packet.

1 37. A method comprising:  
2 receiving a data packet from a source with a session identity;  
3 storing the session identity if needed;  
4 removing the session identity from the data packet; and  
5 transmitting the data packet to a destination.

1 38. A method as in claim 37 wherein receiving a data packet from a source with a  
2 session identity comprises receiving the data packet with the session identity  
3 encapsulated in a header.

1 39. A method as in claim 37 wherein storing the session identity comprises storing  
2 the session identity in a forwarding table.

1 40. An article of manufacture comprising:  
2 a machine-accessible medium including instructions that, when executed by a  
3 machine, causes the machine to perform operations comprising:  
4 receiving a data packet from a source with a session identity;  
5 storing the session identity if needed;  
6 removing the session identity from the data packet; and  
7 transmitting the data packet to a destination.

1 42. An article of manufacture as in claim 40 wherein said instructions for storing the  
2 session identity comprises further instructions for storing the session identity in a  
3 forwarding table.